

IN THE CLAIMS

Please amend the claims as follows:

Claims 1-44 (Canceled).

Claim 45 (New): An anisotropically conductive sheet comprising:

an insulating sheet body formed of an elastic polymeric substance, in which a plurality of through holes for forming conductive paths, each extending in a thickness-wise direction of the insulating sheet body, have been formed, and conductive path elements integrally provided in the respective through-holes for forming conductive paths of the insulating sheet body, wherein,

the through-holes for forming conductive paths in the insulating sheet body are formed by using a mask for exposure, in which a plurality of through holes for beam transmission, the diameter of each of which becomes gradually smaller from one surface toward the other surface of the mask, have been formed in accordance with a pattern corresponding to a pattern of conductive path elements to be formed, and irradiating the insulating sheet body with a laser beam through the through-holes for beam transmission in the mask for exposure from the other surface side of the mask for exposure.

Claim 46 (New): The anisotropically conductive sheet according to claim 45, wherein the conductive path elements contain conductive particles exhibiting magnetism in a state oriented in a thickness-wise direction thereof.

Claim 47 (New): The anisotropically conductive sheet according to claim 45, wherein the elastic polymeric substance forming the insulating sheet body is silicone rubber.

Claim 48 (New): A process for producing an anisotropically conductive sheet, comprising:

providing a mask for exposure, in which a plurality of through-holes for beam transmission, the diameter of each of which becomes gradually smaller from one surface toward the other surface of the mask, and each of which extends in a thickness-wise direction of the mask, have been formed in accordance with a pattern corresponding to a pattern of conductive path elements to be formed, arranging the mask for exposure on one surface of an insulating sheet base formed of an elastic polymeric substance in such a manner that the one surface of the mask for exposure comes into contact with the one surface of the insulating sheet base, and irradiating the insulating sheet base with a laser beam through the through-holes for beam transmission in the mask for exposure from the other surface side of the mask for exposure, thereby forming an insulating sheet body in which a plurality of through-holes for forming conductive paths, each extending in a thickness-wise direction of the sheet body, have been formed, and

charging a conductive path element-forming material with conductive particles dispersed in a polymeric substance-forming material, which will become an elastic polymeric substance by being cured, into each of the through-holes for forming conductive paths in the insulating sheet body, thereby forming conductive path element-forming material layers in the respective through-holes for forming conductive paths in the insulating sheet body, and subjecting the conductive path element-forming material layers to a curing treatment, thereby forming conductive path elements provided integrally with the insulating sheet body.

Claim 49 (New): A process for producing an anisotropically conductive sheet having an insulating sheet body formed of an elastic polymeric substance, in which a plurality of through-holes for forming conductive paths, each extending in a thickness-wise direction of

the insulating sheet body, have been formed, and conductive path elements integrally provided in the respective through-holes for forming conductive paths of the insulating sheet body in a state protruding from at least one surface of the insulating sheet body, the process comprising:

providing a mask for exposure, in which a plurality of through-holes for beam transmission, the diameter of each of which becomes gradually smaller from one surface toward the other surface of the mask, and each of which extends in a thickness-wise direction of the mask, have been formed in accordance with a pattern corresponding to a pattern of conductive path elements to be formed,

preparing a laminate with a resin layer for forming projected parts formed on at least one surface of an insulating sheet base composed of the elastic polymeric substance, arranging the mask for exposure on one surface of the laminate in such a manner that the one surface of the mask for exposure comes into contact with the one surface of the laminate, and irradiating the insulating sheet base with a laser beam through the through-holes for beam transmission in the mask for exposure from the other surface side of the mask for exposure to form a plurality of through-holes for forming conductive paths, each extending in a thickness-wise direction of the insulating sheet base, in the insulating sheet base of the laminate, and at the same time forming a plurality of through-holes for forming projected parts, each extending continuously with its corresponding through-hole for forming a conductive path in the thickness-wise direction, in the resin layer for forming projected parts of the laminate, thereby forming a primary composite body with the resin layer for forming projected parts formed on at least one surface of an insulating sheet body,

charging a conductive path element-forming material with conductive particles dispersed in a polymeric substance-forming material, which will become an elastic polymeric substance by being cured, into spaces for forming conductive path elements, including

internal spaces of the through-holes for forming conductive paths in the insulating sheet body and internal spaces of the through-holes for forming projected parts in the resin layer for forming projected parts, thereby forming conductive path element-forming material layers in the respective spaces for forming conductive paths, and subjecting the conductive path element-forming material layers to a curing treatment to form conductive path elements, thereby forming a secondary composite body with a plurality of the conductive path elements integrally provided in the spaces for forming conductive path elements in the primary composite body, and

dissolving the resin layer for forming projected parts of the secondary composite body to remove it, thereby forming projected parts protruding from at least one surface of the insulating sheet body on the respective conductive path elements.

Claim 50 (New): The process according to claim 49 for producing the anisotropically conductive sheet, wherein silicone rubber is used as the elastic polymeric substance forming the insulating sheet body, and polyvinyl alcohol is used as a resin layer-forming material forming the resin layer for forming projected parts.

Claim 51 (New): An anisotropically conductive connector comprising a frame plate having an opening and the anisotropically conductive sheet according to claim 45, which is arranged so as to close the opening in the frame plate and supported by an opening edge of the frame plate.

Claim 52 (New): An anisotropically conductive connector suitable for use in conducting electrical inspection of each of a plurality of integrated circuits formed on a wafer in a state of the wafer, comprising:

a frame plate, in which a plurality of openings have been formed correspondingly to regions, in which electrodes to be inspected in all of the integrated circuits formed on the wafer, which is an object of inspection, have been arranged, and a plurality of anisotropically conductive sheets respectively arranged so as to close the openings in the frame plate and supported by their corresponding opening edges of the frame plate, wherein each of the anisotropically conductive sheets is the anisotropically conductive sheet according to claim 45.

Claim 53 (New): An anisotropically conductive connector suitable for use in conducting electrical inspection of each of a plurality of integrated circuits formed on a wafer in a state of the wafer, comprising:

a frame plate, in which a plurality of openings have been formed correspondingly to regions, in which electrodes to be inspected in a plurality of integrated circuits selected from among the integrated circuits formed on the wafer, which is an object of inspection, have been arranged, and a plurality of anisotropically conductive sheets respectively arranged so as to close the openings in the frame plate and supported by their corresponding opening edges of the frame plate, wherein each of the anisotropically conductive sheets is the anisotropically conductive sheet according to claim 45.

Claim 54 (New): A process for producing an anisotropically conductive connector, comprising:

providing a frame plate, in which an opening has been formed, forming a layer of a polymeric substance-forming material, which will become an elastic polymeric substance by being cured, in the opening of the frame plate and at a peripheral edge portion thereof and subjecting the polymeric substance-forming material layer to a curing treatment, thereby

forming a primary composite body with an insulating sheet base composed of the elastic polymeric substance and formed so as to close the opening in the frame plate supported by an opening edge of the frame plate,

irradiating the insulating sheet base with a laser beam through a plurality of through-holes for beam transmission in a mask for exposure, in which the through-holes for beam transmission, the diameter of each of which becomes gradually smaller from one surface toward the other surface of the mask, and each of which extends in a thickness-wise direction of the mask, have been formed in accordance with a pattern corresponding to a pattern of conductive path elements to be formed, from the side of the other surface of the mask for exposure, thereby forming a secondary composite body with an insulating sheet body, in which a plurality of through-holes for forming conductive paths, each extending in a thickness-wise direction of the sheet body, have been formed, and which has been formed so as to close the opening in the frame plate, supported by the opening edge of the frame plate, and

charging a conductive path element-forming material with conductive particles dispersed in a polymeric substance-forming material, which will become an elastic polymeric substance by being cured, into each of the through-holes for forming conductive paths in the secondary composite body, thereby forming conductive path element-forming material layers, and subjecting the conductive path element-forming material layers to a curing treatment, thereby forming an anisotropically conductive sheet with conductive path elements integrally provided in the through-holes for forming conductive paths of the insulating sheet body.

Claim 55 (New): A process for producing an anisotropically conductive connector, comprising:

providing a frame plate, in which a plurality of openings each extending in a thickness-wise direction of the frame plate have been formed correspondingly to regions, in which electrodes to be inspected in all of integrated circuits formed on a wafer, which is an object of inspection, have been arranged, or regions, in which electrodes to be inspected in a plurality of integrated circuits selected from among the integrated circuits formed on the wafer have been arranged,

forming a layer of a polymeric substance-forming material, which will become an elastic polymeric substance by being cured, in each of the openings of the frame plate and at a peripheral edge portion thereof and subjecting the polymeric substance-forming material layer to a curing treatment, thereby forming a primary composite body with a plurality of insulating sheet bases each composed of the elastic polymeric substance and formed so as to close the openings in the frame plate supported by their corresponding opening edges of the frame plate,

irradiating the insulating sheet bases with a laser beam through a plurality of through-holes for beam transmission in a mask for exposure, in which the through-holes for beam transmission, the diameter of each of which becomes gradually smaller from one surface toward the other surface of the mask, and each of which extends in a thickness-wise direction of the mask, have been formed in accordance with a pattern corresponding to a pattern of conductive path elements to be formed, from the side of the other surface of the mask for exposure, thereby forming a secondary composite body with a plurality of insulating sheet bodies, in which a plurality of through-holes for forming conductive paths, each extending in a thickness-wise direction of each of the sheet bodies, have been formed, supported by their corresponding opening edges of the frame plate, and

charging a conductive path element-forming material with conductive particles dispersed in a polymeric substance-forming material, which will become an elastic polymeric

substance by being cured, into each of the through-holes for forming conductive paths in the secondary composite body, thereby forming conductive path element-forming material layers, and subjecting the conductive path element-forming material layers to a curing treatment, thereby forming anisotropically conductive sheets with conductive path elements integrally provided in the through-holes for forming conductive paths of each of the insulating sheet bodies.

Claim 56 (New): A process for producing an anisotropically conductive connector equipped with a frame plate having an opening and an anisotropically conductive sheet arranged so as to close the opening in the frame plate and supported by an opening edge of the frame plate, in the anisotropically conductive sheet of which a plurality of conductive path elements each extending in a thickness-wise direction of the sheet are formed in a state protruding from at least one surface of an insulating sheet base composed of an elastic polymeric substance, the process comprising:

providing the frame plate, in which the opening has been formed, forming a layer of a polymeric substance-forming material, which will become the elastic polymeric substance by being cured, in the opening of the frame plate and at an opening edge portion thereof, and subjecting the polymeric substance-forming material layer to a curing treatment, thereby forming an insulating sheet base composed of the elastic polymeric substance in the opening of the frame plate and at the opening edge portion thereof to prepare a laminate with a resin layer for forming projected parts formed on at least one surface of the insulating sheet base,

arranging a mask for exposure, in which a plurality of through-holes for beam transmission, the diameter of each of which becomes gradually smaller from one surface toward the other surface of the mask, have been formed in accordance with a pattern corresponding to a pattern of conductive path elements to be formed, on one surface of the

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lamine in such a manner that the one surface of the mask for exposure comes into contact with the one surface of the lamine, and irradiating the insulating sheet base with a laser beam through the through-holes for beam transmission in the mask for exposure from the other surface side of the mask for exposure to form a plurality of through-holes for forming conductive paths, each extending in a thickness-wise direction of the insulating sheet base, in the insulating sheet base of the lamine, and at the same time forming a plurality of through-holes for forming projected parts, each extending continuously with its corresponding through-hole for forming a conductive path in the thickness-wise direction, in the resin layer for forming projected parts of the lamine, thereby forming a primary composite body with the resin layer for forming projected parts formed on at least one surface of an insulating sheet body provided in the opening of the frame plate and at the opening edge portion thereof,

charging a conductive path element-forming material with conductive particles dispersed in a polymeric substance-forming material, which will become an elastic polymeric substance by being cured, into spaces for forming conductive path elements, including internal spaces of the through-holes for forming conductive paths in the insulating sheet body and internal spaces of the through-holes for forming projected parts in the resin layer for forming projected parts, thereby forming conductive path element-forming material layers in the respective spaces for forming conductive paths, and subjecting the conductive path element-forming material layers to a curing treatment to form conductive path elements, thereby forming a secondary composite body with a plurality of the conductive path elements integrally provided in the spaces for forming conductive path elements in the primary composite body, and

dissolving the resin layer for forming projected parts of the secondary composite body to remove it, thereby forming projected parts protruding from at least one surface of the insulating sheet body on the respective conductive path elements.

Claim 57 (New): A process for producing an anisotropically conductive connector, comprising:

providing a frame plate, in which a plurality of openings each extending in a thickness-wise direction of the frame plate have been formed correspondingly to regions, in which electrodes to be inspected in all of integrated circuits formed on a wafer, which is an object of inspection, have been arranged, or regions, in which electrodes to be inspected in a plurality of integrated circuits selected from among the integrated circuits formed on the wafer have been arranged,

forming a layer of a polymeric substance-forming material, which will become an elastic polymeric substance by being cured, in each of the openings of the frame plate and at an opening edge portion thereof and subjecting the polymeric substance-forming material layer to a curing treatment, thereby preparing a laminate, in which insulating sheet bases composed of the elastic polymeric substance and formed so as to close the respective openings in the frame plate are supported by their corresponding opening edges of the frame plate, and a resin layer for forming projected parts is formed on at least one surface of the insulating sheet base,

arranging a mask for exposure, in which a plurality of through-holes for beam transmission, the diameter of each of which becomes gradually smaller from one surface toward the other surface of the mask, and each of which extends in a thickness-wise direction of the mask, have been formed in accordance with a pattern corresponding to a pattern of conductive path elements to be formed, on one surface of the laminate in such a manner that

the one surface of the mask for exposure comes into contact with the one surface of the laminate, and irradiating the insulating sheet bases with a laser beam through the through-holes for beam transmission in the mask for exposure from the other surface side of the mask for exposure to form a plurality of through-holes for forming conductive paths, each extending in a thickness-wise direction of the insulating sheet base, in the insulating sheet bases of the laminate, and at the same time forming a plurality of through-holes for forming projected parts, each extending continuously with its corresponding through-hole for forming a conductive path in the thickness-wise direction, in the resin layer for forming projected parts of the laminate, thereby forming a primary composite body with the resin layer for forming projected parts formed on at least one surface of each of insulating sheet bodies provided in the opening of the frame plate and at the opening edge portion thereof,

charging a conductive path element-forming material with conductive particles dispersed in a polymeric substance-forming material, which will become an elastic polymeric substance by being cured, into spaces for forming conductive path elements, including internal spaces of the through-holes for forming conductive paths in the insulating sheet bodies and internal spaces of the through-holes for forming projected parts in the resin layer for forming projected parts, thereby forming conductive path element-forming material layers in the respective spaces for forming conductive paths, and subjecting the conductive path element-forming material layers to a curing treatment to form conductive path elements, thereby forming a secondary composite body with a plurality of the conductive path elements integrally provided in the spaces for forming conductive path elements in the primary composite body, and

dissolving the resin layer for forming projected parts of the secondary composite body to remove it, thereby forming projected parts protruding from at least one surface of each of the insulating sheet bodies on the respective conductive path elements.

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Claim 58 (New): The process according to claim 56 for producing the anisotropically conductive connector, wherein silicone rubber is used as the elastic polymeric substance forming the insulating sheet body, and polyvinyl alcohol is used as a resin layer-forming material forming the resin layer for forming projected parts.

Claim 59 (New): The process according to claim 57 for producing the anisotropically conductive connector, wherein silicone rubber is used as the elastic polymeric substance forming the insulating sheet body, and polyvinyl alcohol is used as a resin layer-forming material forming the resin layer for forming projected parts.

Claim 60 (New): A probe for circuit inspection, comprising:
a circuit board for inspection, on a surface of which inspection electrodes have been formed in accordance with a pattern corresponding to a pattern of electrodes to be inspected of a circuit device, which is an object of inspection, and the anisotropically conductive sheet according to claim 45, which is arranged on the surface of the circuit board for inspection.

Claim 61 (New): A probe for circuit inspection, comprising:
a circuit board for inspection, on a surface of which inspection electrodes have been formed in accordance with a pattern corresponding to a pattern of electrodes to be inspected of a circuit device, which is an object of inspection, and the anisotropically conductive connector according to claim 51, which is arranged on the surface of the circuit board for inspection.

Claim 62 (New): A probe for circuit inspection that is suitable for use in conducting electrical inspection of each of a plurality of integrated circuits formed on a wafer in a state of the wafer, comprising:

a circuit board for inspection, on a surface of which inspection electrodes have been formed in accordance with a pattern corresponding to a pattern of electrodes to be inspected in all of the integrated circuits formed on the wafer, which is an object of inspection, and the anisotropically conductive connector according to claim 52, which is arranged on the surface of the circuit board for inspection.

Claim 63 (New): A probe for circuit inspection that is suitable for use in conducting electrical inspection of each of a plurality of integrated circuits formed on a wafer in a state of the wafer, comprising:

a circuit board for inspection, on a surface of which inspection electrodes have been formed in accordance with a pattern corresponding to a pattern of electrodes to be inspected in a plurality of integrated circuits selected from among the integrated circuits formed on the wafer, which is an object of inspection, and the anisotropically conductive connector according to claim 53, which is arranged on the surface of the circuit board for inspection.

Claim 64 (New): The probes for circuit inspection according to claim 62, wherein a sheet-like connector composed of an insulating sheet and a plurality of electrode structures each extending through in a thickness-wise direction of the insulating sheet and arranged in accordance with a pattern corresponding to the pattern of the inspection electrodes in the circuit board for inspection is arranged on the anisotropically conductive connector.

Claim 65 (New): The probes for circuit inspection according to claim 63, wherein a sheet-like connector composed of an insulating sheet and a plurality of electrode structures each extending through in a thickness-wise direction of the insulating sheet and arranged in accordance with a pattern corresponding to the pattern of the inspection electrodes in the circuit board for inspection is arranged on the anisotropically conductive connector.

Claim 66 (New): An electrical inspection apparatus for circuit devices, comprising the probe for circuit inspection according to claim 60.